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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/070,697

04/04/2002

Takashi Mimura

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EXAMINER

VO, HAI

ART UNIT

PAPER NUMBER

1771

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/070,697

Applicant(s)

MIMURA ET AL.

Examiner

Hai Vo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/10/2006</u> | 6) <input type="checkbox"/> Other: _____ |

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1. All of the art rejections have been withdrawn in view of the present amendment.

None of the applied references teach or suggest a coating layer comprising at least 20% by weight of a light stabilizer component *based on the weight of the copolymer*.

Kamath teaches a coating material comprising 0 to 20 parts by weight of a light stabilizer component per 100 parts by weight of an acrylic prepolymer. Likewise, the light stabilizer component is contributed about 17% by weight or less based on the total weight of the copolymer. However, upon further consideration, new grounds of rejections are made in view of newly discovered references to Behrens et al (US 5,124,378) and Orberg et al (US 5,872,165).

2. The 112 claim rejections, second paragraph have been overcome in view of the present amendment.

Specification

3. The amendments to the specification filed on 03/16/2007 have been considered and entered because they do not raise the issue of new matter and are intended to correct the informality.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 13-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Support for the coating comprising at least 20% by weight of a light stabilizer component based on the weight of the copolymer is nowhere found in the specification of the present invention. The description that the coating comprises at least 20% by weight of a light stabilizer component based on the weight of the resin component is fully provided in the second paragraph at page 18 of the present specification.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 13-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyakawa et al (US 5,672,409) in view of Oberg et al (US 5,872,165). Miyakawa teaches a reflector for surface light sources comprising a white film having a three-layer structure A/B/A wherein the B-layer is made of a polyester resin and contains fine voids (column 6, lines 35-40, example 2). Miyakawa teaches a coating layer on the white film comprising a mixture of acrylic resin, silica particles, and fluorescent whitening agent (example 5). Miyakawa discloses the white film having the degree of glossiness within the claimed range (table 1). Miyakawa teaches the white film is formed from a resin composition consisting essentially of polyester (column 3, lines

25-45). Miyakawa teaches that the voids are formed through melt extrusion of a mixture of a polyester resin, a polyolefin resin, and inorganic particles, followed by stretching the film in at least one direction (column 3, line 59 et seq.). Miyakawa teaches an acrylic coating being applied to the white film. However, Miyakawa is silent as to the coating layer comprising a copolymer of an acrylic resin with a light stabilizer. Oberg, however, a coating material made from an acrylic resin with attached light stabilizing group for stabilization of the coating against thermal and light degradation and for improving the durability and weatherability of the coatings (abstract). The light stabilizer includes a hindered amine, benzotriazole, benzophenone and combination thereof and incorporated into the coating composition in an amount of 0.1 to 30 wt% based on total coating composition weight (column 6, lines 17-21 and example 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the acrylic resin with chemically attached light stabilizing group for the acrylic resin of Miyawa motivated by the desire to stabilize the coating layer against thermal and light degradation and provide the coating layer with excellent weather resistance, and improved durability.

Miyakawa does not specifically disclose that the voids in the surface layer are smaller than the voids in the inner layer. However, Miyakawa teaches that the A-layer contains inorganic fine particles and the sheet of the laminated polymers A/B/A is stretched in at least one direction (example 3). It appears that Miyakawa and Applicants are using inorganic particles having similar particle size and present in

the same amounts in the A- and B-layers (Miyakawa, column 6, lines 40-42, 60-65 vs. Applicants' specification, pages 10 and 22). Further, Miyakawa is using the same approach to form the voids in the white film. The voids are created around the inorganic particles through stretching. Therefore, it is the examiner's position that the relative void diameter in the A-layer and B-layer would be inherently present because it seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties.

8. Claims 13-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyakawa et al (US 5,672,409) in view of Behrens et al (US 5,124,378). Miyakawa teaches a reflector for surface light sources comprising a white film having a three-layer structure A/B/A wherein the B-layer is made of a polyester resin and contains fine voids (column 6, lines 35-40, example 2). Miyakawa teaches a coating layer on the white film comprising a mixture of acrylic resin, silica particles, and fluorescent whitening agent (example 5). Miyakawa discloses the white film having the degree of glossiness within the claimed range (table 1). Miyakawa teaches the white film is formed from a resin composition consisting essentially of polyester (column 3, lines 25-45). Miyakawa teaches that the voids are formed through melt extrusion of a mixture of a polyester resin, a polyolefin resin, and inorganic particles, followed by stretching the film in at least one direction (column 3, line 59 et seq.). Miyakawa teaches an acrylic coating being applied to the white film. However, Miyakawa is

silent as to the coating layer comprising a copolymer of an acrylic resin with a light stabilizer. Behrens, however, a coating material made from an acrylic resin with attached light stabilizing group for stabilization of the coating against thermal and light degradation and for improving the durability and weatherability of the coatings (abstract). The light stabilizer includes a hindered amine, benzotriazole, benzophenone and combination thereof and incorporated into the coating composition in an amount of 0.2 to 20 wt% based on total coating composition weight (column 16, lines 38-40). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the acrylic resin with chemically attached light stabilizing group for the acrylic resin of Miyawa motivated by the desire to stabilize the coating layer against thermal and light degradation and provide the coating layer with excellent weather resistance, and improved durability.

Miyakawa does not specifically disclose that the voids in the surface layer are smaller than the voids in the inner layer. However, Miyakawa teaches that the A-layer contains inorganic fine particles and the sheet of the laminated polymers A/B/A is stretched in at least one direction (example 3). It appears that Miyakawa and Applicants are using inorganic particles having similar particle size and present in the same amounts in the A- and B-layers (Miyakawa, column 6, lines 40-42, 60-65 vs. Applicants' specification, pages 10 and 22). Further, Miyakawa is using the same approach to form the voids in the white film. The voids are created around the inorganic particles through stretching. Therefore, it is the examiner's position that the

relative void diameter in the A-layer and B-layer would be inherently present because it seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties.

9. Claims 13-17, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al (US 5,710,856) in view of Oberg et al (US 5,872,165). Ishii discloses a light reflective sheet comprising a porous resin sheet and a protective layer laminated on at least one surface of the porous resin sheet (abstract). Ishii discloses that the protective layer contains a light stabilizer component (column 14, lines 45-48, column 8, line 61). Ishii teaches the coating layer further comprising inorganic fine particles (column 13, lines 60-62). Ishii teaches a light reflective sheet having a light reflectance greater than 85% (table 1). Ishii teaches a porous resin layer comprising a fluorescent brightener (column 8, lines 50-57). Ishii teaches a protective layer made from an acrylic resin. Ishii does not specifically disclose the protective layer containing a copolymer of an acrylic resin and a hindered amine light stabilizer. Oberg, however, a coating material made from an acrylic resin with attached light stabilizing group for stabilization of the coating against thermal and light degradation and for improving the durability and weatherability of the coatings (abstract). The light stabilizer includes a hindered amine, benzotriazole, benzophenone and combination thereof and incorporated into the coating composition in an amount of 0.1 to 30 wt% based on total coating composition

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weight (column 6, lines 17-21 and example 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute an acrylic resin with chemically attached light stabilizing group for the acrylic resin of Ishii motivated by the desire to stabilize the coating layer against thermal and light degradation and provide the coating layer with excellent weather resistance, and improved durability.

Ishii does not specifically disclose the degree of glossiness of the light reflective sheet. However, the light reflective sheet of Ishii as modified Oberg is structurally the same and made of the same materials as Applicants' article. It appears that the light reflective sheet of Ishii as modified by Oberg has a light reflectance within the claimed range. Therefore, it is not seen that the modified light reflective sheet would have possessed the degree of glossiness outside the range as claimed by the present invention. This is in line with *Ex part slob*, 157 USPQ 172. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete.

10. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al (US 5,710,856) in view of Oberg et al (US 5,872,165) as applied to claim 13 above, further in view of Miyakawa et al (US 5,672,409). Ishii does not disclose the porous resin layer being a composite film. Miyakawa, however, teaches a reflector for surface light sources comprising a white film having a three-layer structure A/B/A wherein the B-layer contains fine voids (column 6, lines 35-40, example 2). Therefore, it would have been obvious to one having ordinary skill in

the art at the time the invention was made to use the porous resin layer in the form of a composite film having a layer construction as taught by Miyakawa motivated by the desire to provide to enhance structural stability of the white film.

11. Claims 13-17, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al (US 5,710,856) in view of Behrens et al (US 5,124,378). Ishii discloses a light reflective sheet comprising a porous resin sheet and a protective layer laminated on at least one surface of the porous resin sheet (abstract). Ishii discloses that the protective layer contains a light stabilizer component (column 14, lines 45-48, column 8, line 61). Ishii teaches the coating layer further comprising inorganic fine particles (column 13, lines 60-62). Ishii teaches a light reflective sheet having a light reflectance greater than 85% (table 1). Ishii teaches a porous resin layer comprising a fluorescent brightener (column 8, lines 50-57). Ishii teaches a protective layer made from an acrylic resin. Ishii does not specifically disclose the protective layer containing a copolymer of an acrylic resin and a hindered amine light stabilizer. Behrens, however, a coating material made from an acrylic resin with attached light stabilizing group for stabilization of the coating against thermal and light degradation and for improving the durability and weatherability of the coatings (abstract). The light stabilizer includes a hindered amine, benzotriazole, benzophenone and combination thereof and incorporated into the coating composition in an amount of 0.2 to 20 wt% based on total coating composition weight (column 16, lines 38-40). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute an

acrylic resin with chemically attached light stabilizing group for the acrylic resin of Ishii motivated by the desire to stabilize the coating layer against thermal and light degradation and provide the coating layer with excellent weather resistance, and improved durability.

Ishii does not specifically disclose the degree of glossiness of the light reflective sheet. However, the light reflective sheet of Ishii as modified Behrens is structurally the same and made of the same materials as Applicants' article. It appears that the light reflective sheet of Ishii as modified by Behrens has a light reflectance within the claimed range. Therefore, it is not seen that the modified light reflective sheet would have possessed the degree of glossiness outside the range as claimed by the present invention. This is in line with *Ex parte Slob*, 157 USPQ 172. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete.

12. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii et al (US 5,710,856) in view of Behrens et al (US 5,124,378) as applied to claim 13 above, further in view of Miyakawa et al (US 5,672,409). Ishii does not disclose the porous resin layer being a composite film. Miyakawa, however, teaches a reflector for surface light sources comprising a white film having a three-layer structure A/B/A wherein the B-layer contains fine voids (column 6, lines 35-40, example 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the porous resin layer in the form

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of a composite film having a layer construction as taught by Miyakawa motivated by the desire to provide to enhance structural stability of the white film.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hai Vo

**HAIVO
PRIMARY EXAMINER**

HV